



Update on INFN Bari Site Readiness

GEM Workshop

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Overview

- **INFN Bari participated successfully to the GE1/1 detectors production**
 - 18 detectors assembled and validated
 - Lab and clean room fully equipped (details in next slides)
- **Pre-production GE2/1 M4 module constructed in November 2018**
 - and successfully validated
- **Availability to build 38 GE2/1 modules**
 - Core team available
 - Enthousiast students
 - Pool of trained Technicians

Trained Technicians

Michele Franco	Assembly
Nicola Lacalamita	Assembly
Sabino Martiradonna	Assembly
Domenico Dell'Olio	Assembly
Pasquale Dipinto	Assembly

CORE Team

Piet Verwilligen	Staff	Assembly resp.
Mohmamad Gul	Post-Doc	Assembly, QC
Rosma Venditti	Post-Doc	QC- resp.
Federica Simone	PhD student	Assembly, QC
Cristina Aruta	PhD student	Assembly, QC
Antonello Pellecchia	PhD Student	Assembly, QC
Antonio Ranieri	Staff (Pension)	Assembly

Readiness of clean room and assembly

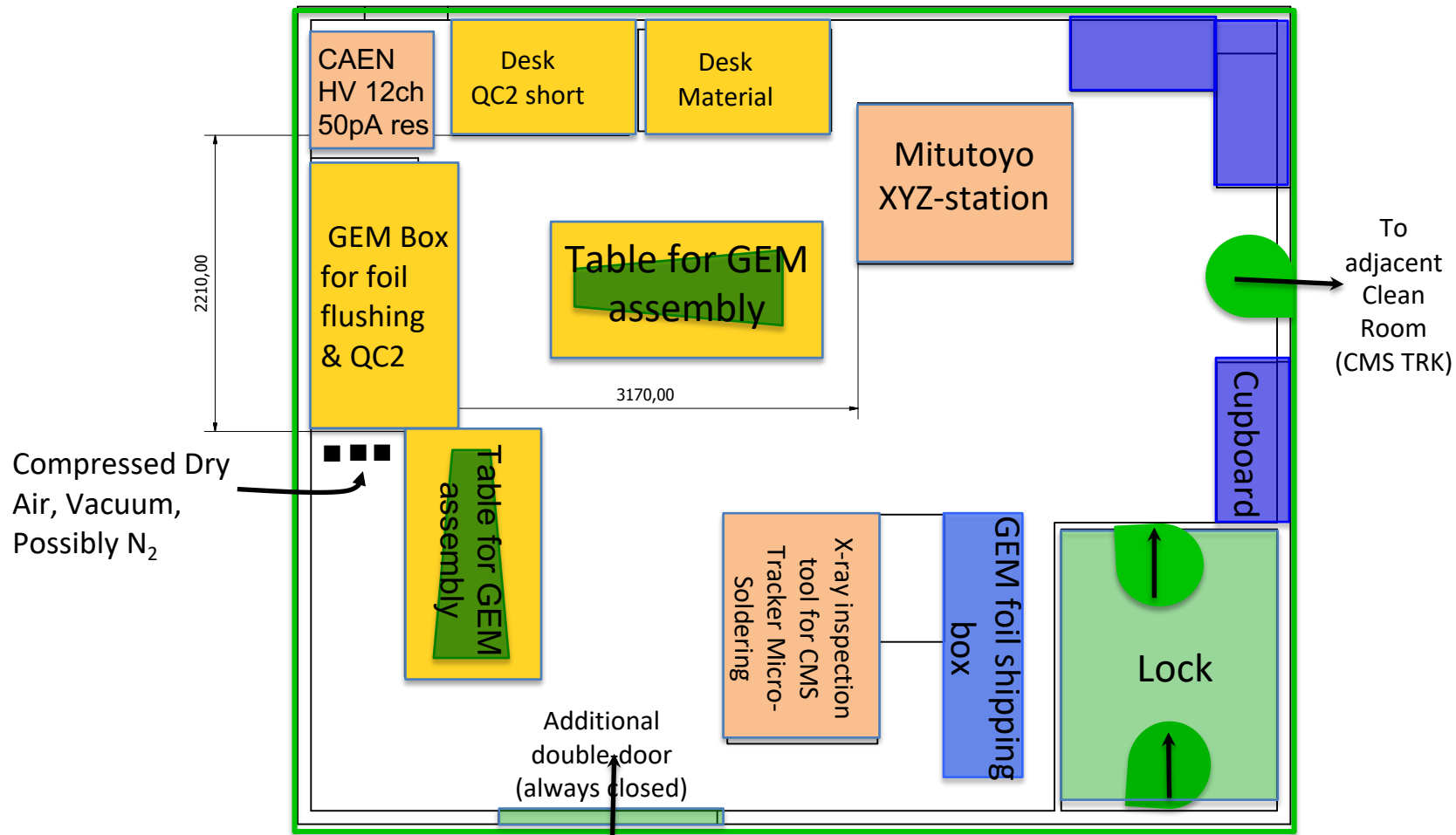
- Team is well trained:
 - First experience on Gen-IV detectors (assembly both at CERN & Bari Clean Room) 2014
 - Antonio, Piet and Michele F. participated in the assembly training at CERN for GE1/1 2017
 - Other technicians has been trained during the GE1/1 detectors assembly @ home 2018
 - First experience on demonstrator GE2/1 modules (assembly M1 @ CERN and M4 @ Bari) 2018
- Assembly always in 1 full working day: 0.5 d for material preparation, 0.5 d for assembly

- Class 10,000 Clean room with class 1,000 areas (tables)
- Fully equipped with assembly tools for GE1/1 detectors
- Recently bought CAEN HV 12ch 50pA to allow QC2 Long



Clean room map

VIEW1 (1 : 25)



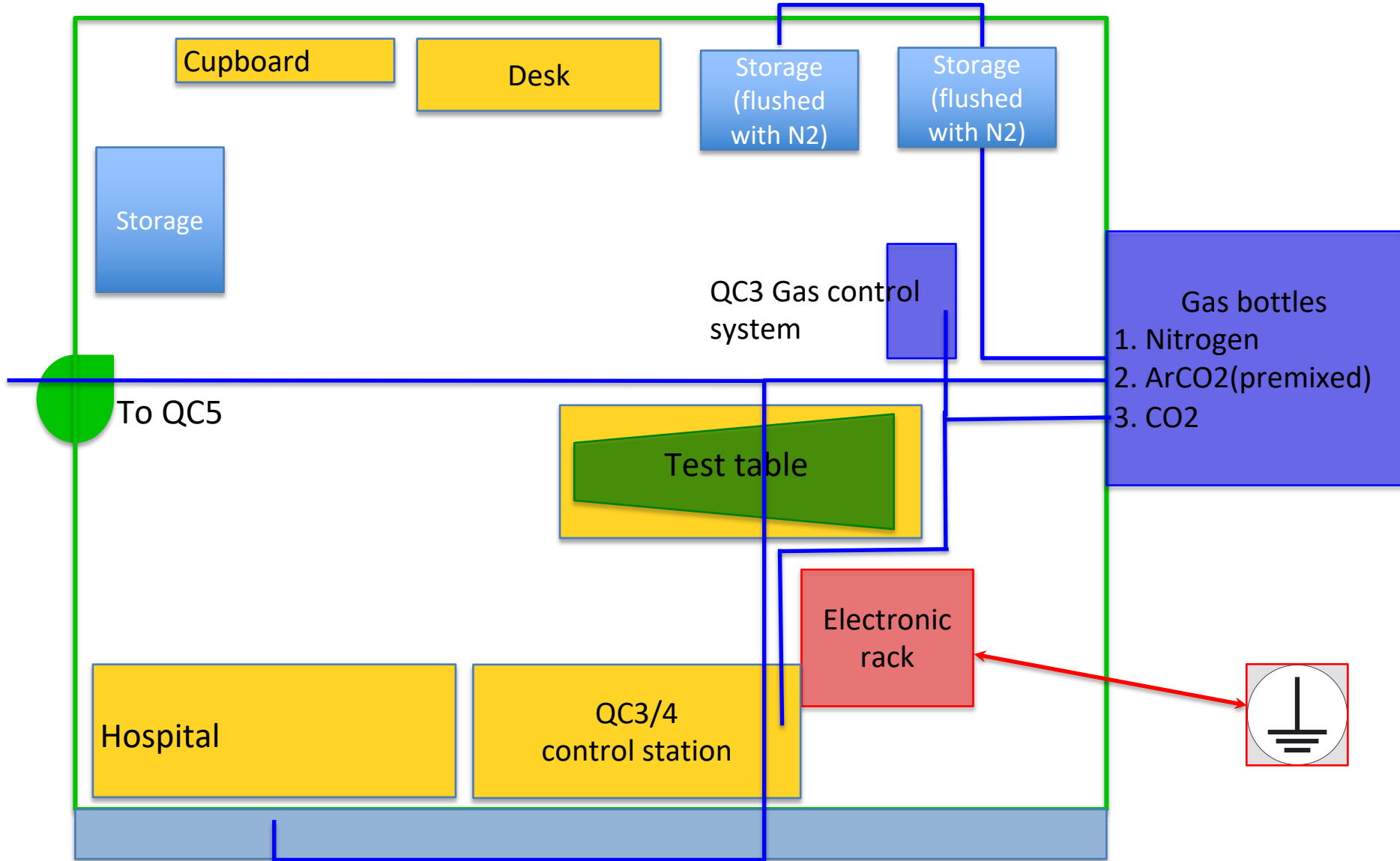
- New box for flushing powered gem foils in dry air
- Enough space to
 - perform gem-foil current leakage test
 - host the gem foils shipping box

Readiness QC Stands

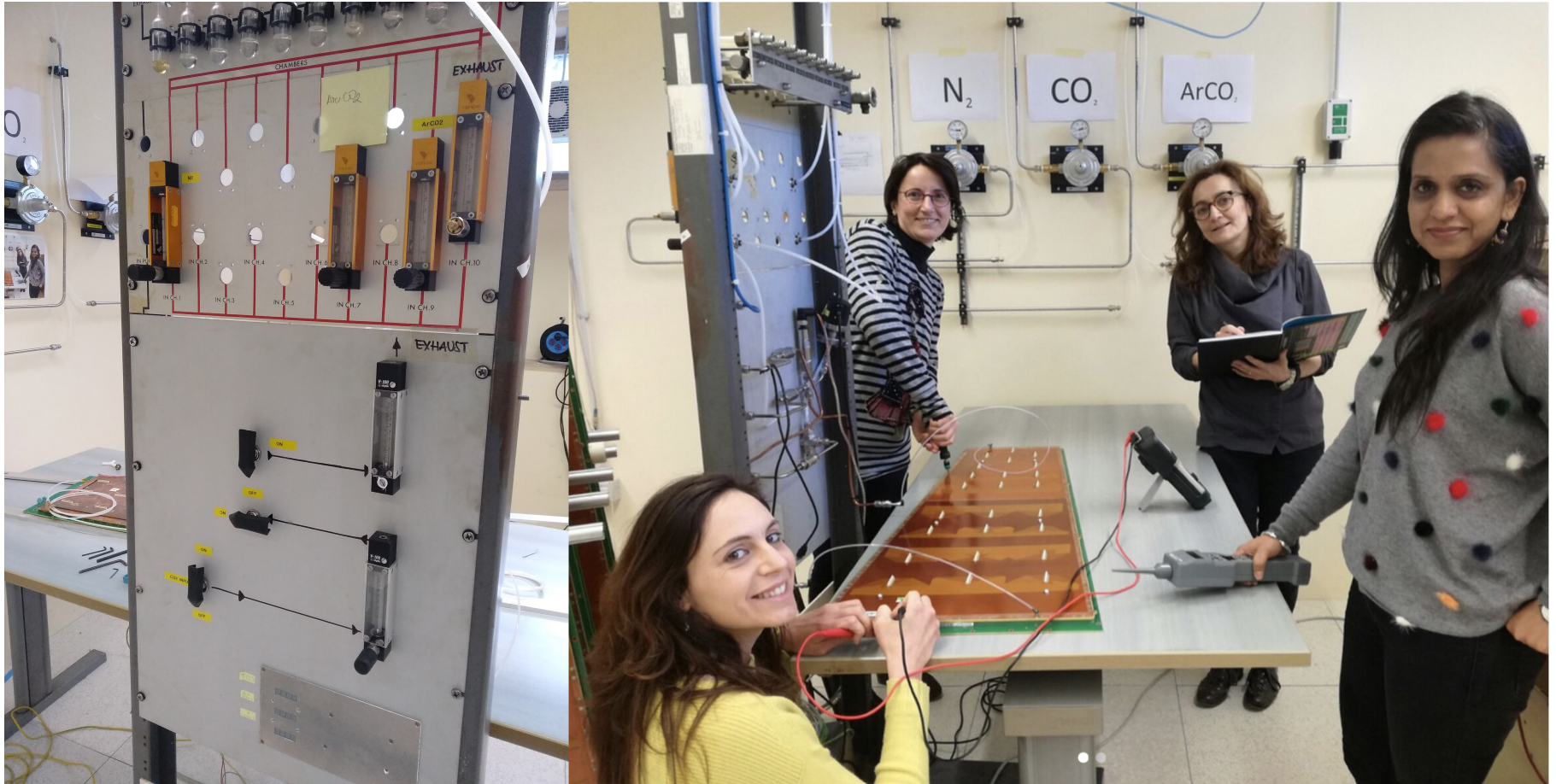
- Labs and QC stands fully equipped with material needed for GE1/1 detectors validation
- For GE2/1 detector validation Hirose-to-Panasonic connectors are needed

	Procurement (HW+SW)	Notes
QC2 Short	Not complete	Missing Hirose-to-Panasonic (HRS-Pan) connectors to reuse Panasonic-to-Lemo
QC3	complete	
QC4	complete	
QC5 – Effective Gain	Not complete	Mixer to be repaired, now working with premixed bottle; missing HRS-Pan
QC5 – Uniformity	Not complete	2 fec v 1.3, 2 adc (1 in Frascati), 24 apv; missing HRS-Pan
Hospital	complete	
Storage Space	18 units available, never really used for GE1/1	

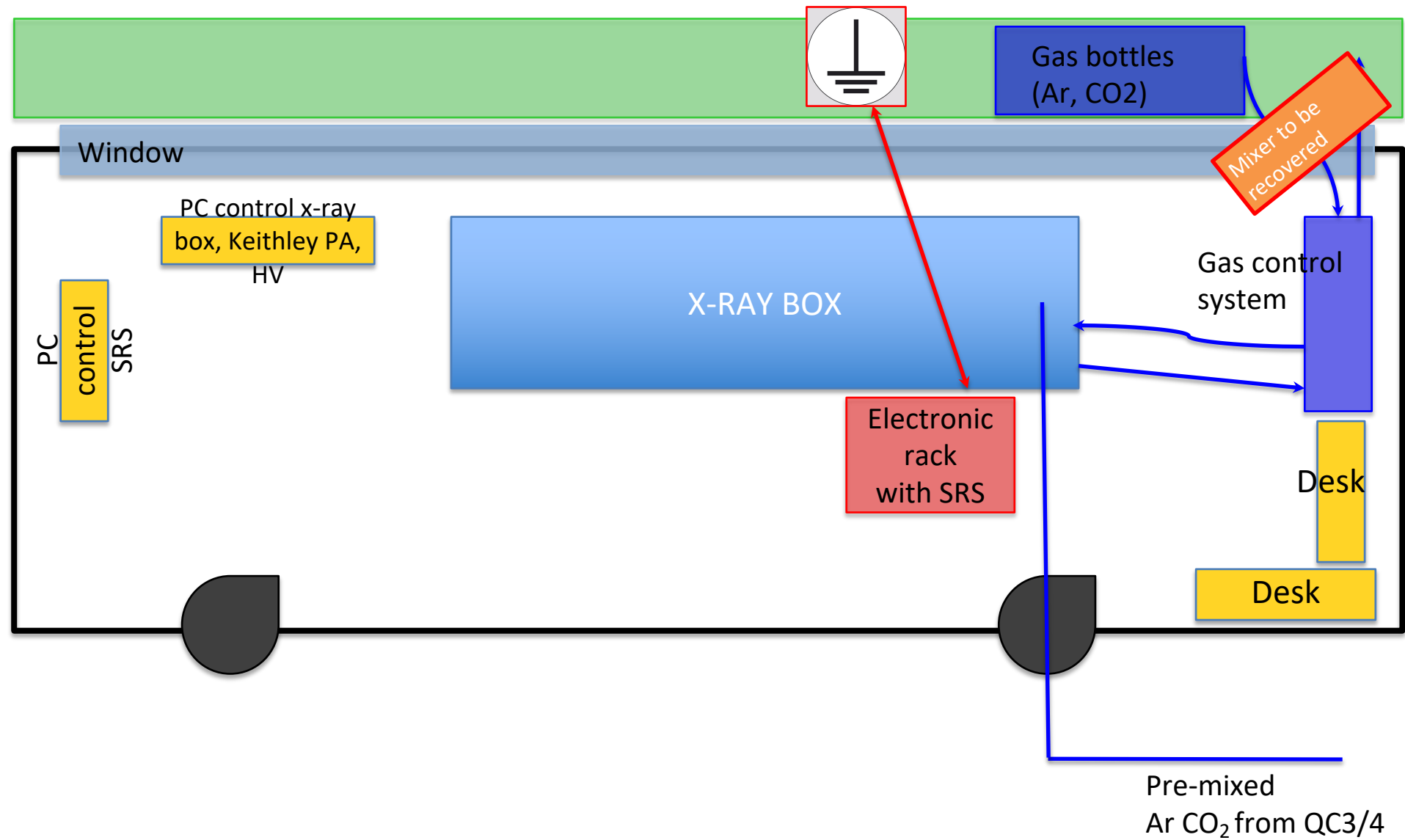
QC3/QC4 test stand



Pics of the QC3/QC4 lab



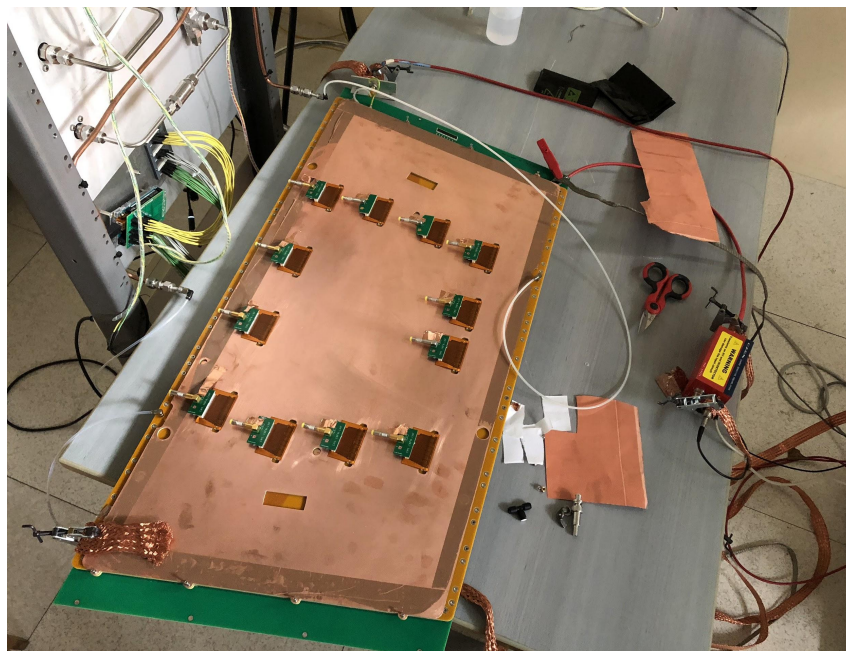
QC5 test stand



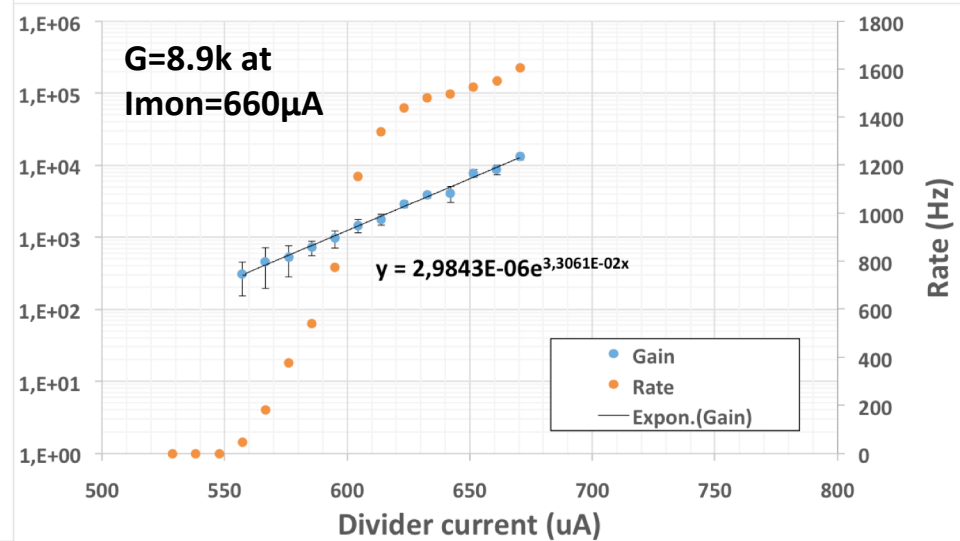
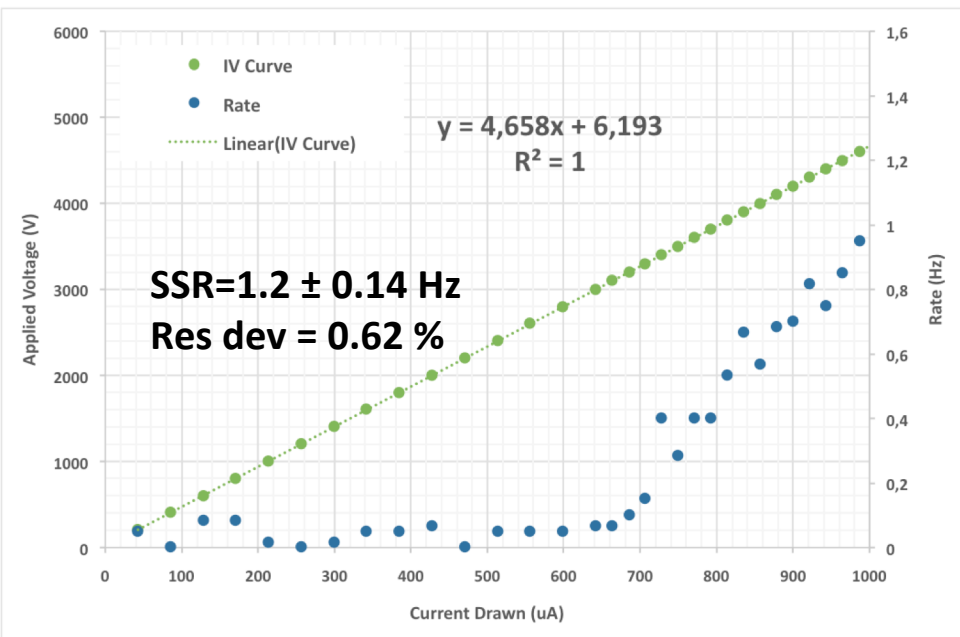
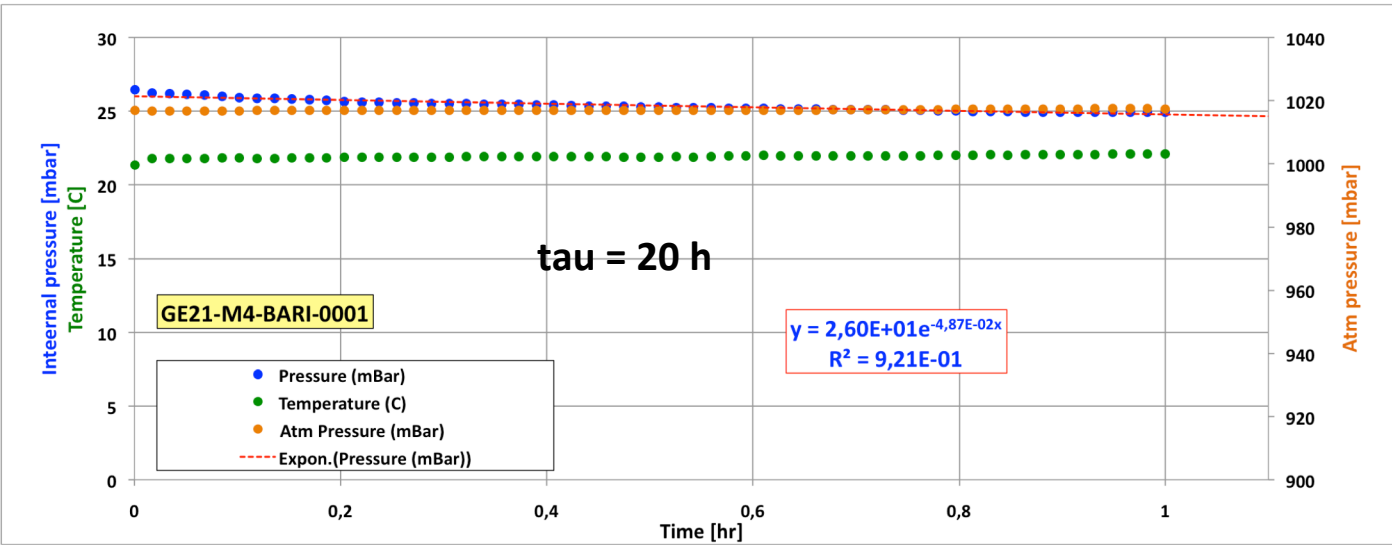
Pics of the QC5 lab



GE2/1 M4 Module Construction and QC



M4 Module Validation results



Conclusions

- INFN Bari is almost ready for production and validation of GE21 modules
- Pre-prod GE2/1 M4 module already constructed & tested at Bari
 - Fixed Drift board to Optical Bench;
 - Designed Assembly JIG but need final M4 layout
 - **Only missing item are HRS-to-PAN connectors**
- (Wo)man power trained for production and QC and available for the next 2 years